REMARKS

The above amendments and following remarks are responsive to the office action of December 14, 2004. Claims 1 –18 remain pending. Claims 1 and 8 are independent. Claims 1 and 3 – 5 are amended for clarity. Claim 6 is amended to correct a typographical error and to depend from amended claim 4. Claim 7 is amended to depend from amended claim 4. No new matter is added.

We appreciate the indication of allowable subject matter in claims 8-18, 5 and 7.

Claim Rejections – 35 USC § 112

Claim 6 stands rejected under 35 USC § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As suggested by the Examiner, claim 6 is amended to add a period to end the claim.

Claim Rejections – 35 USC § 103

Claims 1-3 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent Number 5,835,968 granted to Mahalingaiah et al. (hereinafter "Mahalingaiah"). Respectfully we disagree.

When applying 35 U.S.C. §103, the following tenets of patent law must be adhered to:

a) The claimed invention must be considered as a whole;
b) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
c) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
d) Reasonable expectation of success is the standard with which obviousness is determined. MPEP §2141.01, *Hodosh v. Block*

Drug Co., Inc., 786 F.2d 1136, 1134 n.5, 229 U.S.P.Q. 182, 187 n.5 (Fed. Cir. 1986).

In addition, it is respectfully noted that to substantiate a *prima facie* case of obviousness the initial burden rests with the Examiner who must fulfill three requirements. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. (emphasis and formatting added) MPEP § 2143, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 1 is amended to include limitations of speculative data age, features that are for example cited within objected-to claim 5. Amended claim 1 thus recites a method for data forwarding within a processor architecture of the type having an array of pipelines and a register file with a first section of n registers and a second section of m registers, including the steps:

a) architecting data from write-back stages of the pipelines to a first section of n registers of the register file;
b) writing speculative data from the pipelines to a second section of m registers of the register file;
c) reading the speculative data from the second section of m registers based upon an age of the speculative data; and
d) forwarding the speculative data to the pipelines to bypass data hazards therein.

In step a) of claim 1, data is architected from write-back stages of the pipelines to a first section of n registers of the register file. Support for step a) can be found in at least paragraph [0018] of the immediate specification. Step b) requires that speculative data be written to a second section of m registers of the register file. Step c) requires that speculative data read from the second section of m registers is based upon an age of the speculative data; step c is for example performed in accord with

paragraphs [0020], [0021] and FIG. 6 of the immediate application. That is, age of speculative data within register file columns 316 is utilized when reading the speculative data.

Mahalingaiah does not disclose reading speculative data based upon its age. Mahalingaiah cannot, therefore, render claim 1 obvious under 35 U.S.C. §103. Reconsideration of claim 1 is respectfully requested.

Claims 2 and 3 depend from claim 1 and benefit from like argument. Reconsideration of claims 2 and 3 is respectfully requested.

Amended claim 4 stands rejected under 35 USC § 103(a) as being unpatentable over U.S. Mahalingaiah in further view of U.S. Patent Number 6,219,781 granted to Arora (hereinafter "Arora"). Respectfully we disagree.

Amended claim 4 depends from claim 1 and benefits from the arguments presented above. In addition to those arguments, amended claim 4 has other features that patentably distinguish over Mahalingaiah and Arora. For example, amended claim 4 recites utilizing decode register file column logic of the register file to architect speculative data within the second section of m registers, without moving data. In accord with the immediate application, architecting speculative states in registers n+1 – m without moving data "utilizes the decode logic of decoders 250, 252 to decode, and then select, an age of the produces of the speculative state. In effect the newest producer enables decode." See paragraph [0019] of the immediate application. Neither Mahalingaiah nor Arora disclose column logic of the register file to architect speculative data within a second section of m registers. The speculative register scoreboard of Arora is specifically used for storing "the register ID" and not the speculative data. See Arora col. 4, lines 54 – 64. Further, since Arora addresses the problem of register hazard detection, a combination of Mahalingaiah and Arora is not reasonable under 35 U.S.C. §103 to *reduce* bypass logic size.

Claim 5 was objected to as depending from a rejected base claim; but in view of the amendments to claim 1, both claim 1 and claim 5 are believed to be allowable.

Claim 6 is amended to add a period to the end of the claim and to depend from claim 4. There are no other rejections of claim 6; therefore we contend that claim 6 is also allowable.

Claim 7 was objected to as depending from a rejected base claim; but in view of the amendments to claim 1, both claim 1 and claim 7 are believed to be allowable.

Reconsideration and allowance of claims 4-7 is requested.

Applicant believes no fees are due in connection with this Amendment and Response; however, if any fee is deemed necessary, the Commissioner is authorized to charge such fee to Deposit Account No. 08-2025.

Respectfully submitted,

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